

Figure 1

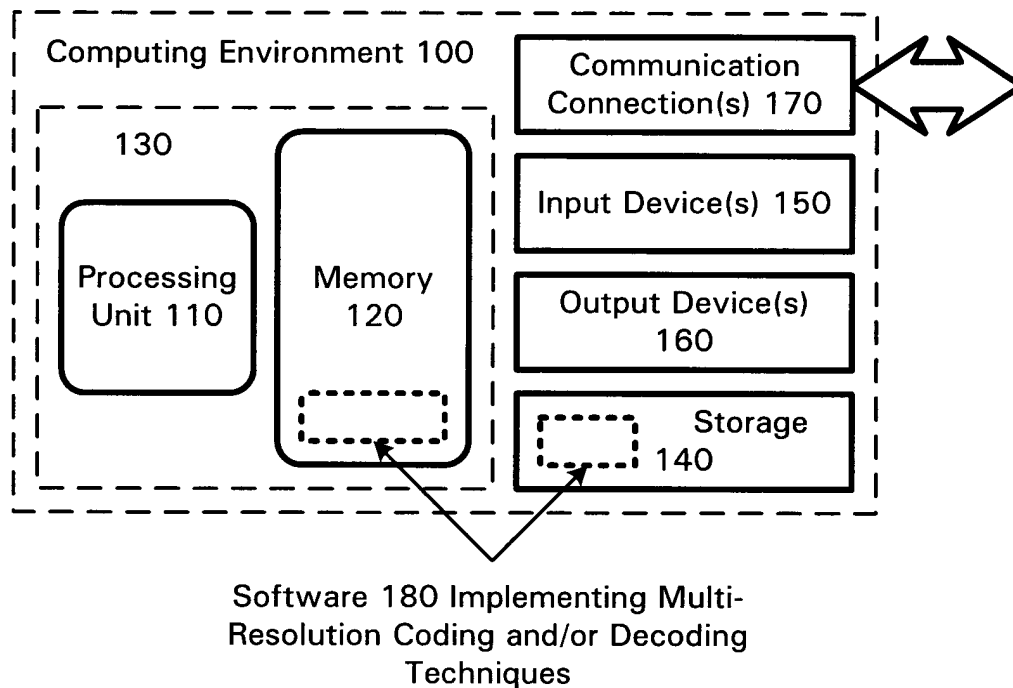


Figure 2

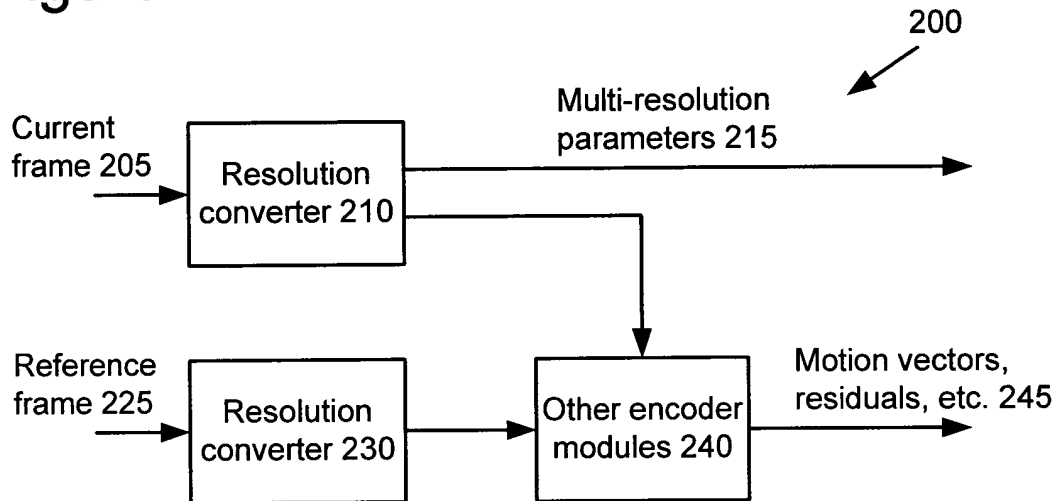


Figure 3

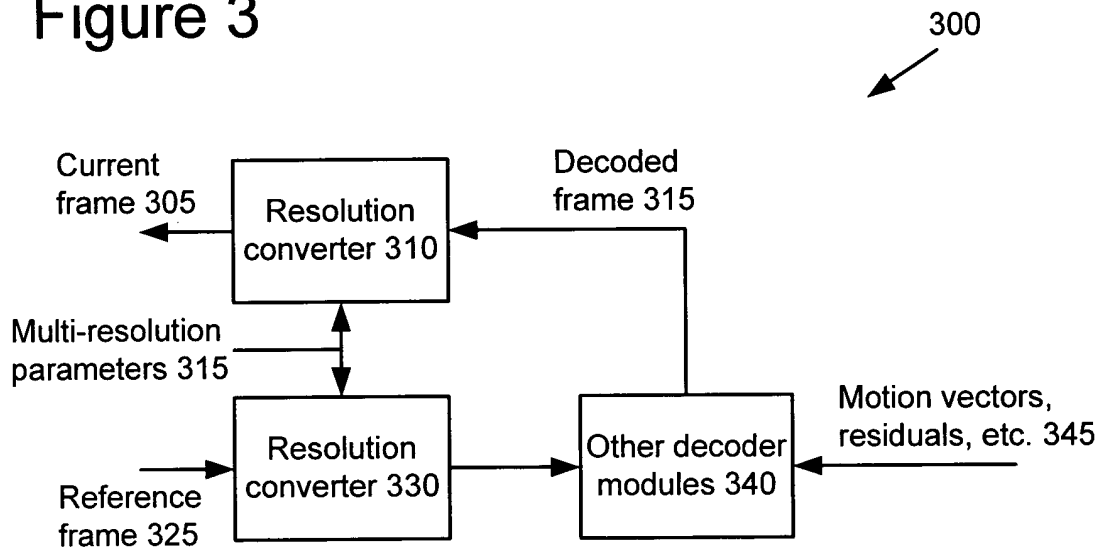


Figure 4

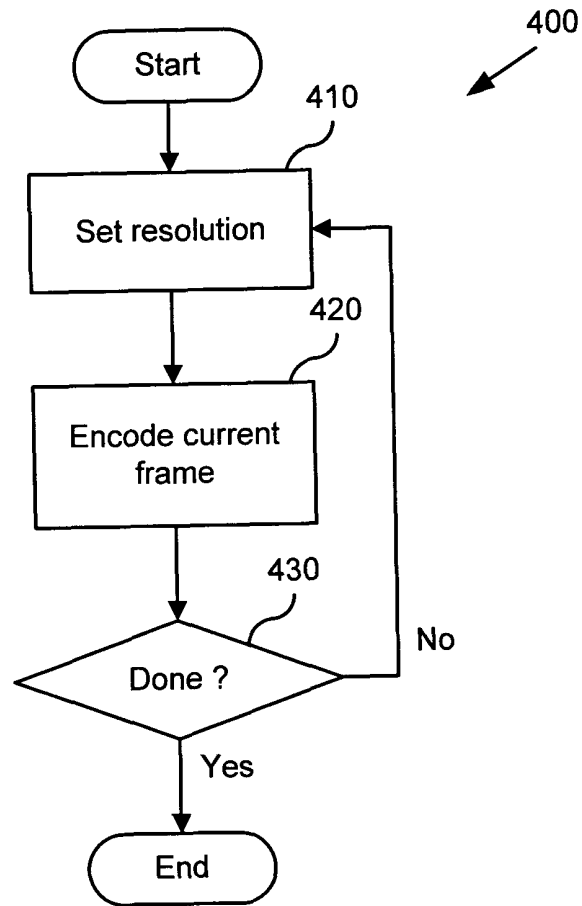


Figure 5

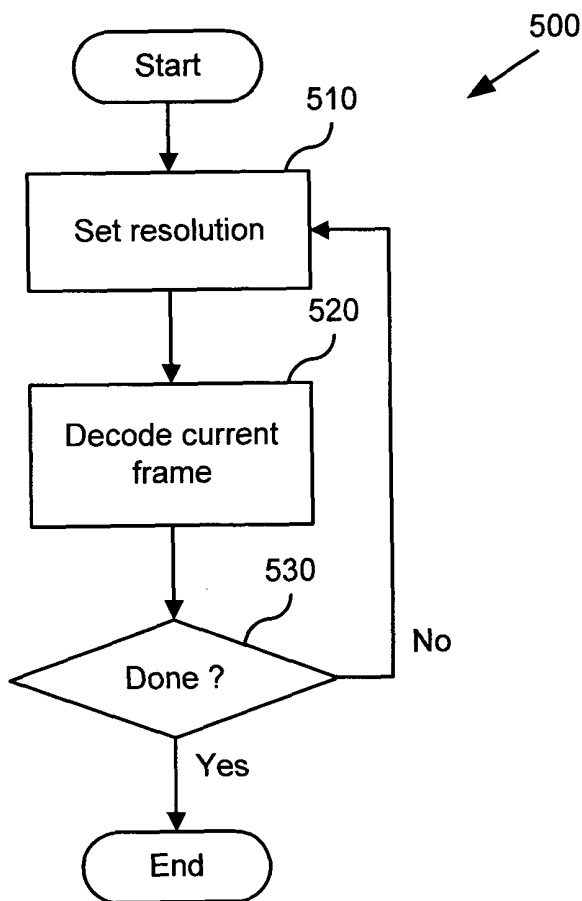


Figure 6

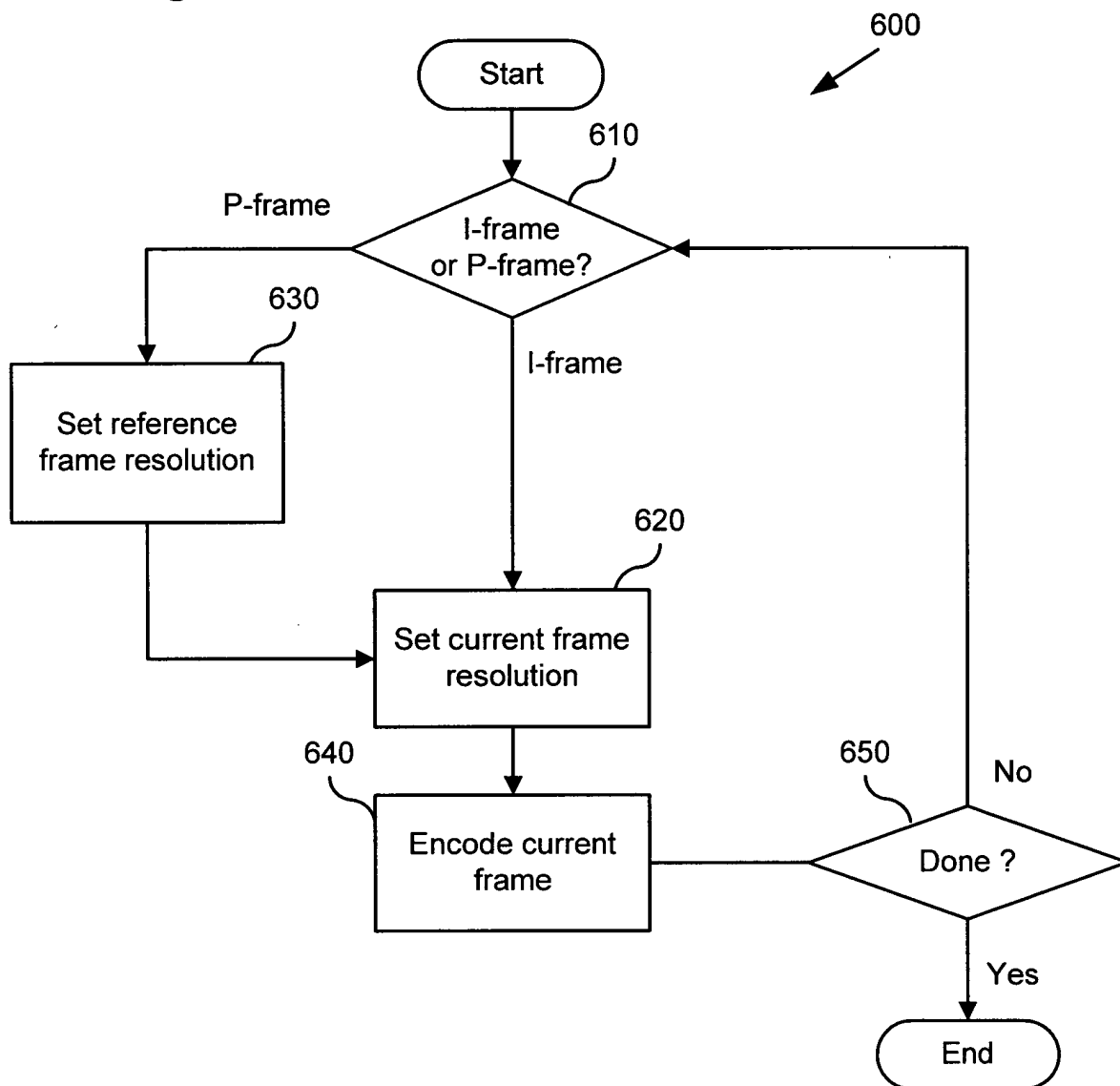


Figure 7

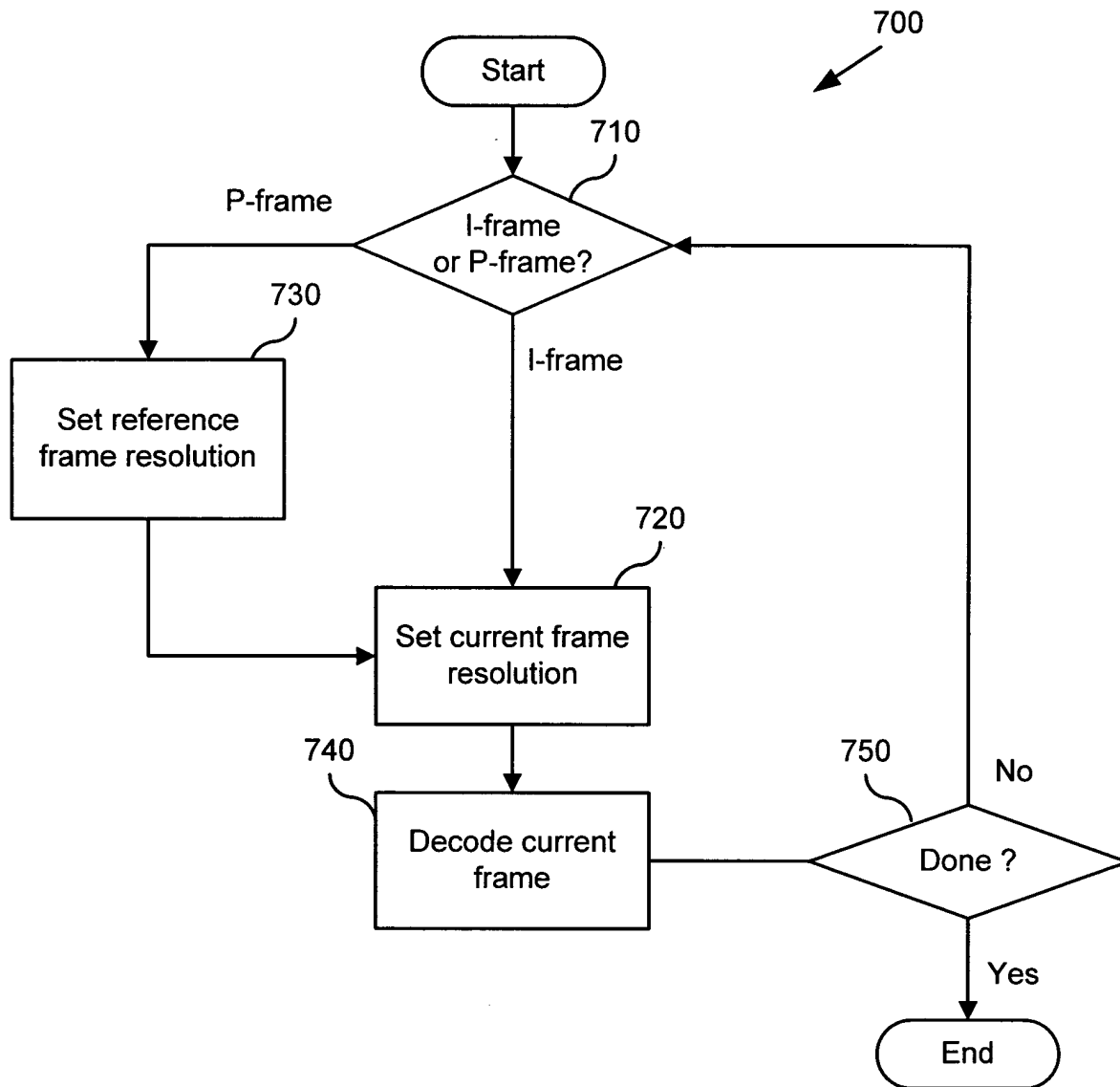


Figure 8

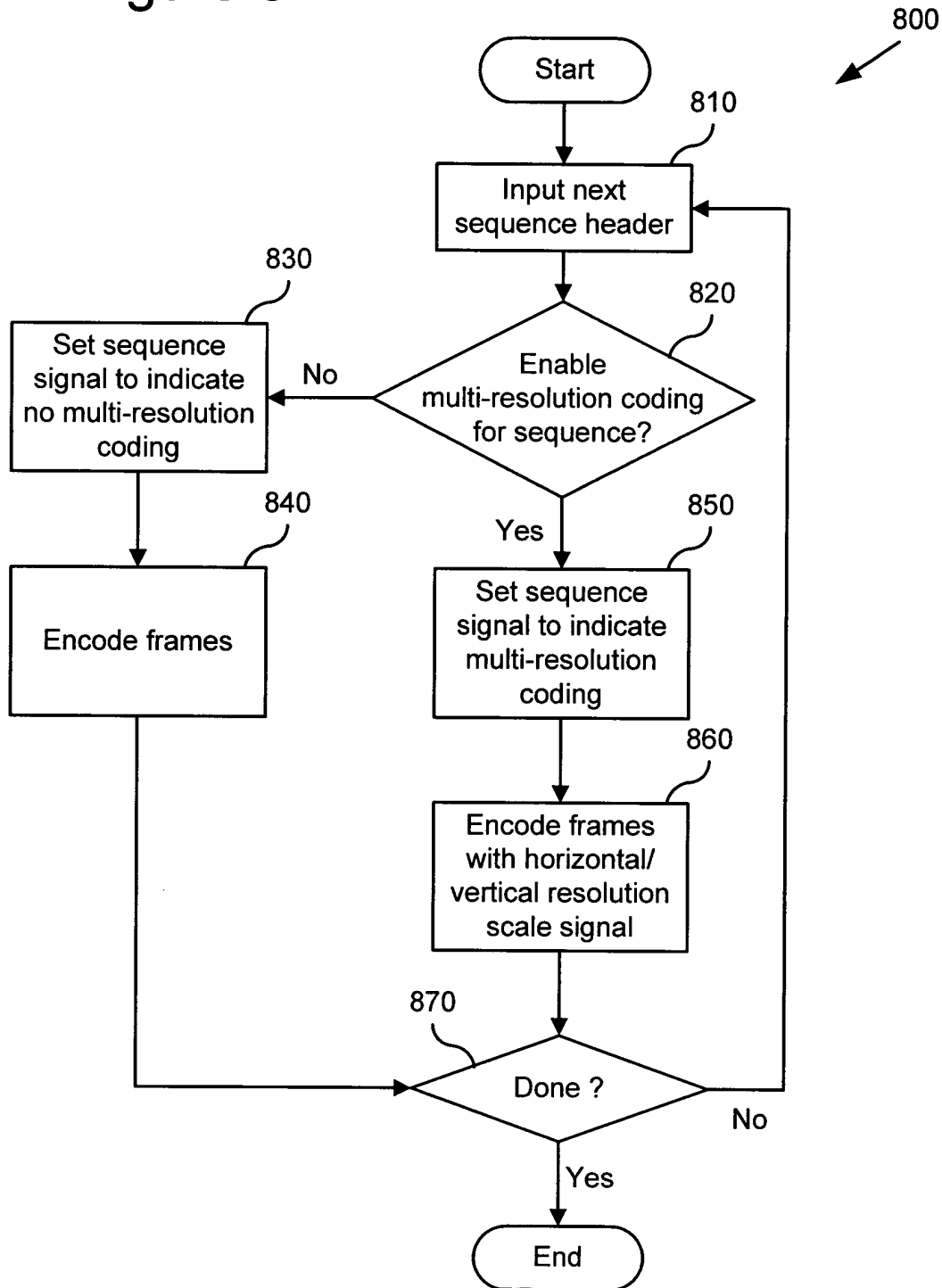


Figure 9

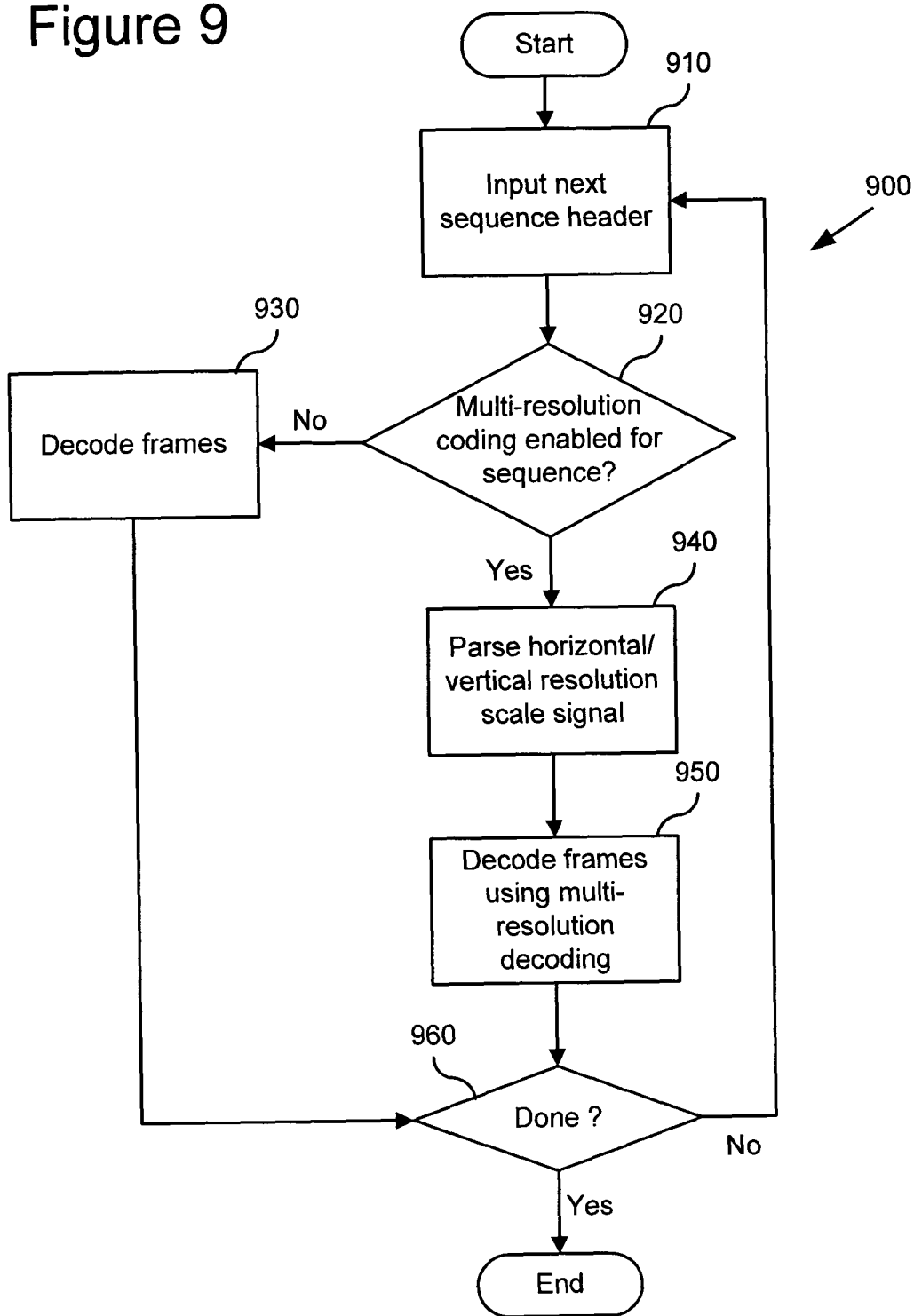


Figure 10

1000
↙

AW1 = 70
AW2 = 5
AW3 = -11

```
downsamplefilter_line(x[])
{
    y[0] = (((x[0] + x[1]) * AW1 + (x[2] + x[0]) * AW2 + (x[3] + x[1]) * AW3 + RND_DOWN)
    >> 7)

    for(Int j = 2; j < Nu - 2; j += 2) {
        y[j] = (((x[j] + x[j+1]) * AW1 + (x[j-1] + x[j+2]) * AW2 + (x[j-2] + x[j+3]) * AW3 +
        RND_DOWN) >> 7)
    }

    y[Nu-2] = (((x[Nu-2] + x[Nu-1]) * AW1 + (x[Nu-3] + x[Nu-1]) * AW2 + (x[Nu-4] + x[Nu-
    2]) * AW3 + RND_DOWN) >> 7)

    for(j = 0; j < Nu; j += 2) {
        x[j] = CLIP(y[j])
        x[j+1] = 0
    }
}
```

Figure 11

```
SW1 = 28
SW2 = 6
SW3 = -3
upsamplefilter_line(x[])
{
    y[0] = ((x[0] * SW1 + x[0] * SW2 + x[2] * SW3 + x[4] + RND_UP) >> 5)
    y[1] = ((x[0] * SW1 + x[2] * SW2 + x[0] * SW3 + x[2] + RND_UP) >> 5)
    y[2] = ((x[2] * SW1 + x[0] * SW2 + x[4] * SW3 + x[6] + RND_UP) >> 5)
    y[3] = ((x[2] * SW1 + x[4] * SW2 + x[0] * SW3 + x[0] + RND_UP) >> 5)

    for( j = 4; j < Nu - 4; j += 2) {
        y[j] = ((x[j] * SW1 + x[j-2] * SW2 + x[j+2] * SW3 + x[j+4] + RND_UP) >> 5)
        y[j+1] = ((x[j] * SW1 + x[j+2] * SW2 + x[j-2] * SW3 + x[j-4] + RND_UP) >> 5)
    }

    y[Nu-4] = ((x[Nu-4] * SW1 + x[Nu-6] * SW2 + x[Nu-2] * SW3 + x[Nu-2] + RND_UP)
    >> 5)
    y[Nu-3] = ((x[Nu-4] * SW1 + x[Nu-2] * SW2 + x[Nu-6] * SW3 + x[Nu-8] + RND_UP)
    >> 5)
    y[Nu-2] = ((x[Nu-2] * SW1 + x[Nu-4] * SW2 + x[Nu-2] * SW3 + x[Nu-4] + RND_UP)
    >> 5)
    y[Nu-1] = ((x[Nu-2] * SW1 + x[Nu-2] * SW2 + x[Nu-4] * SW3 + x[Nu-6] + RND_UP)
    >> 5)

    for(j = 0; j < Nu; j++)
        x[j] = CLIP(y[j])
}
```

1100

